# Capstone Project - The Battle of Neighborhoods

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## Introduction

Consider an event management company named XYZ. A client approaches the company XYZ to organize a particular event in Toronto. As per the requirements of the client, the company is supposed to give a clear idea of the hotels and event spaces in the city along with the list of all Restaurants available in the vicinity of the hotels/event spaces. So as to facilitate this requirement, the company has to make a list of hotels and event spaces along with the Restaurants that are available nearby to these places.
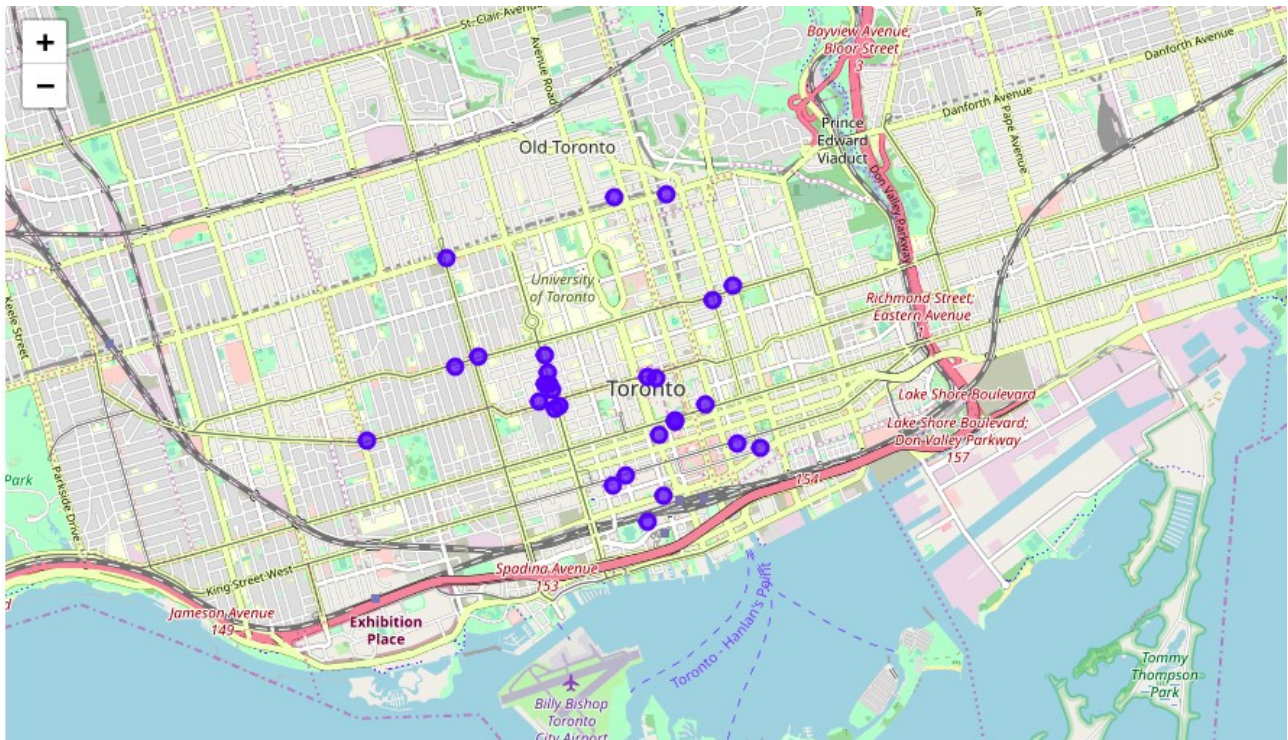
## Data

The data used in this project is provided by Foursquare location data. The data is sorted as per the venue categories that include hotels, event spaces and restaurants.

## Methodology

- Using Foursquare account credentials, we retrieve the location data corresponding to the city of Toronto.
- We create a search query for Hotels and prepare the proper url for the same to get the data corresponding to Hotels
- The json file obtained for Hotels is then converted into a pandas dataframe.
- Preprocessing is done on the pandas dataframe containing hotel data to get it in the required format with only the relevant data
- Now, we create a similar search query for Restaurants and prepare the proper url for the same to get the data corresponding to Restaurants
- The json file obtained for restaurants is then converted into a pandas dataframe.
- Preprocessing is done on the pandas dataframe containing Restaurant data similar to the method used earlier for Hotels, to get it in the required format with only the relevant data.
- A map showing these venues and how they cluster together is finally generated using the Folium library in Python.

# Results

A map showing the details as per the requirements of the client was generated using the above methodology.



# Discussions

From the map, the client can now obtain areas corresponding to the regions which coincide with their choice of restaurants and hotels merging in a common area. This visualisation can also help the client in finalising a place for their event as per the different requirements of their visitors as well.

# Conclusion

The problem presented by the client was successfuly tackled and presented by the company XYZ by using Foursquare location data accompanied by Data Science tools and methodology through various packages/libraries in Python.